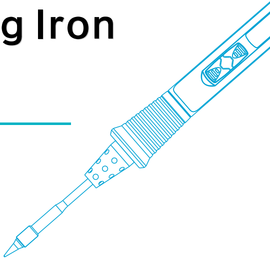
TS80P Smart Soldering Iron

User Manual V1.1



Thank you for purchasing TS80P smart soldering iron.

This user manual is based on APP1.2.

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1 Safrty Statement

1.1 General Safety

- Use only certified power source/adaptors from your region.
  (please refer to P5 for specifications)
- Do not operate in humid environment.
- Do not operate in inflammable/explosive environment.
- Keep the surface of the product clean and dry.

1.2 Warnings

When using TS80P,

- Turn the power off when not in use or left unattended.
- When power is ON,tip temperatures will reach between 100℃~400℃ (212℉~752℉), please be careful.
- Please don’t operate TS80P when it’s wet or operate it with wet hands, which will cause an electric shock.

1.3 Cautions

- The handle is constructed with precision, dropping shall be avoided.
- After continuous use at 350℃ up to 40 minutes, the handle surface temperature will reach 50℃~60℃.
- For the first time using, TS80P may generate a light smoke due to the heating of heating elements, which is a normal phenomenon.

1.4 Liability Statement

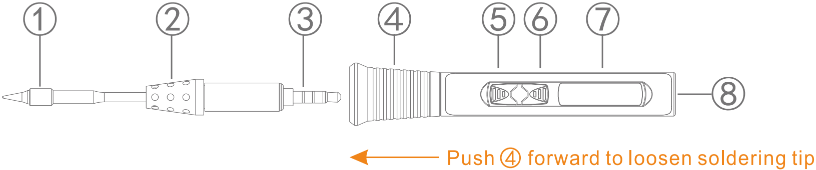
Any damage of the product, or losses related to the product damage, if it's man-caused, or assumed to be man-caused, the liability will belong to the user. The user is responsible for any damage or loss caused by disassembling or modifying the product without permission.

1.5 Working condition

	Operating Conditions		Non-Operating Conditions
Temperature	+0℃～50℃		-20℃～+60℃
Relative Humidity	High Temperature	40℃～50℃ 0%～60%RH	40℃～60℃ 5%～60%RH
	Low Temperature	0℃～40℃ 10%～90%RH	0℃～40℃ 5%～90%RH

2 Product Overview

2.1 Buttons and Interface



1. Tip heating area
2. Heat dispersion protector
3. Tip insert end
4. Tip Fastener
5. Button A(Heating & Temp Adjust)
6. Button B(setting & Temp Adjust)
7. OLED Screen
8. USB Type-C port

2.2 Specifications

Screen	OLED(96*16 dpi)	
Power port	USB Type-C(Can be used to upgrade firmware)	
Dimensions	Operation unit	Length:96mm,φ13-18mm
	Heating unit	Length:100mm,φ 5.5mm;(Share tips with TS80)
Weight	38g	

2.3 Operation Specifications

Power	18W(QC3.0)/30W Max(PD2.0)
Temperature range	100℃~400℃(max)
Temperature stability	±3%
Operation temperature under heat	40℃
Soldering tip resistance to the ground	<2Ω

3 Power Adaptor Selection

TS80P supports two fast charging protocol power adapters: QC power adapters and PD power adapters. If the power adapter supports both QC and PD fast charging protocols, TS80P will select the PD fast charging protocol input mode by default.

- For QC power adapters, Please select power adapters certified by Qualcomm and marked with Qualcomm Quick Charge 3.0 QC3.0 (9V 2A) .It is required to check if the power adapter is marked to support QC3.0 (9V 2A) output before connecting the power adapter.

Note: TS80P will not work normally if the power adapter is not a standard QC3.0 power adapter or does not support a 9V 2A output.

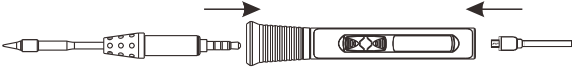
Working Voltage	Working Current	Power	Fastest time to heat from 30℃to 300℃
9V	2A	18W	22s

▶ For PD power adapters, please select a PD power adapter with 9V 3A and 12V 3A output.

Note: TS80P will not work normally if the power adapter is not a standard PD2.0 power adapter or does not support 9V 2A and 12V 3A output.

Working Voltage	Working Current	Power	Fastest time to hear from 30℃ to 300℃
9V	2A	18W	22s
12V	3A	30W(Max)	8s

4.1 Installation



1) Insert soldering tip into the soldering controller;
2) Connect TS80P and power source with a USB Type-C cable, turn on the power and follow the instruction.

Note: If “Sen-Err” appears on TS80P after power is on, it means the soldering tip is not installed securely, please install again.

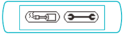
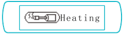
4.2 Default Settings

Default temperature unit	℃
Default temperature	300℃
Sleep mode temperature	200℃
Adjustable temperature range	100℃~400℃(Max)

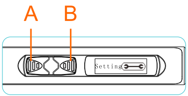
4.3 Basic operation

4.3.1 Screen interface

After power is on, TS80P will show bootup Icon, personalized icon and firmware revision number, then shows standby mode in loops.

	Bootup icon, not modifiable.
	Personalized icon, modifiable; if not modified, it will display bootup icon by default.
	Firmware Version
	Heating & Parameter Setting Icon
	Heating Icon
	Parameter Setting Icon

4.3.2 Parameter setting



- Short press button "B" in standby mode to enter setting mode; Short press button "A/B" in setting mode to select the setting menu and long press button "A" to enter modification mode; after entering modification mode, press button "A/B" to select the appropriate set value; and wait for 5s to return to setting mode change the other settings in the same way.

- Long press button "B" to save the modification and return to standby mode after the setting is completed.

Note: the functions of button A and B are interchangeable in left-hand mode (LH).

Menu Interpretation

Parameter Image	Parameter Name	Definition	Factory Defaults	Adjustable Range
WkTemp 300 ℃	Working Temperature	Working temperature	300	0–400℃
StbTemp 200℃	Sleep Temperature	Standby temperature when entering sleep mode	200	0–400℃
SlpTime 180	Sleep Time	The time needed to enter sleep mode from working mode	180	60–999s
Power 18	Power Setting	Operating power ①, cannot be modified when using PD input.	Max power available (PD); 18(QC)	16–24W
TempStp 10	Temperature Stepping	The stepping for temperature increase or decrease when setting temperature.	10	1–25
OffVolt 10.0	Protection Voltage	Protection voltage when working, if the input voltage exceeds the protection voltage, TS80P will stop heating and alert “High-Vt”.	13.0	10.0–13.0V
Temp ℃	Temperature Display Unit	Temperature display unit, in celsius degree(℃) or Fahrenheit degree(℉)	℃	℃/℉

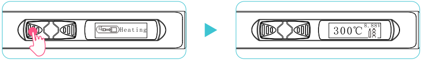
Hand RH	Left/right hand mode	Left/right hand use mode, screen display directions are reverse and key functions are interchangeable in different modes.	RH (right hand)	RH(right hand)/ LH(left hand)
LowCur ON	Wake up power bank for low current output	Use this function in standby mode to keep the power bank active for low current output.	ON	ON/OFF
SWType V	Display voltage / power	Display voltage value (V) or power value (P) in heating status	V	V/P
8.75V 26℃②	Soldering tip calibration	Calibrate the soldering tip in use ③		Long press button “A” for direct operation
Restore DFLT	Restore factory defaults	Restore factory defaults		Long press button “A” for direct operation

Notes: ① The power adapter used shall support the power shown on set value. If the set value exceeds the maximum output power of power adapter, TS80P and power adapter may be damaged.

② Screen display temperature is not current room temperature and possibly there is a difference between them or the display value may display "--℃" before calibration. After calibration, the display temperature will be close to room temperature.

③ Insert soldering tip into TS80P controller and let it stand for 10 minutes before calibration to ensure TS80P and soldering tip cool down to room temperature, and then turn on power for calibration; “Completed” will display after calibration; and “Retry later” will prompt if it fails to meet calibration conditions.

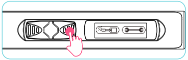
4.3.3 Heating operation



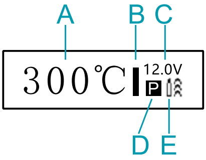
Short press button “A” in standby mode to enter working mode. After the temperature is heated to the preset working temperature, TS80P will automatically stay thermostatic.

The temperature status icons are as follows:

300℃		300℃
Arrows up-heating	Arrows down-cooling	Horizontal lines– temperature stabilizning

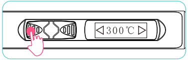


Long press button “B” to return to standby mode;

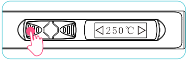


A	Instant working temperature of TS80P
B	Instant power strip, the height of the strip represents the instant power ratio of maximum operating power
C	Input voltage or instant working power (it can be modified through the "ShwType" option in setting menu to display voltage or instant power; V: display voltage, P: display instant power)
D	Power input protocol, P means that PD protocol is being used, while Q for QC protocol, and D for DC input
E	Temperature state of the soldering tip; when the soldering tip icon is marked as solid, it indicates the iron is NOT in a static state, and when it is hollow, the soldering iron is in a static state

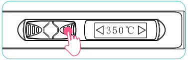
4.3.4 Temperature regulation operation



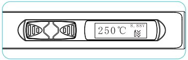
In working mode, long press button "A" to adjust temperature;

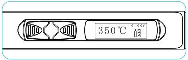


Press button "A" to lower the temperature;

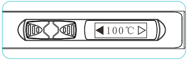


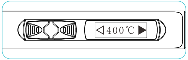
Press button "B" to raise the temperature;





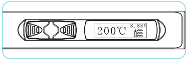
Wait for 5s after setting and then it will return to working mode automatically, the set working temperature will not be saved when power off.



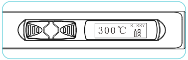


Note: When screen displays solid arrow pointing to left or right (◀or▶), it means the adjustment has already reached its min/max temperature, settings will not be saved when power off.

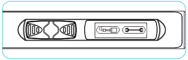
4.3.5 Standby mode



TS80P will enter sleep mode if it stays static for 180s (factory default) in working mode and will cool down to sleep temperature(if the sleep temperature is higher than working temperature, it will keep at preset working temperature) ;



and TS80P, when moving, will return to working mode autoamtically and raise the temperature to working temperature (factory setting is 300℃);



TS80P will return to standby mode if it stands for 180s (factory default) in sleep mode.

4.4 Configuration file

1) Connect soldering iron to computer with USB Type-C cable. A virtual disk will appear on computer, and now it enters setting mode;
2) Open config.txt file in virtual disk to set parameters.

Parameter interpretations are as follows:

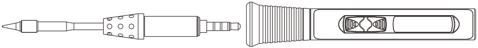
Parameters	Interpretations	Factory Defaults	Adjustable Range
StbTemp	Sleep Temperature	200	100℃～400℃ 212℉～752℉(Temp=1)
WkTemp	Working Temperature	300	100℃～400℃ 212℉～752℉(Temp=1)
SlpTime	Sleep Time	180	60~9999s
TempStp	Temperature Stepping	10	1–25
OffVolt	Protection Voltage	130	100-130 (Unit 0.1V)

Temp	Temperature Display Unit	0	0 is ℃, 1 is ℉
Hand	Left/Right Hand Mode	0	0 is right-hand mode (RH), 1 is left-hand mode (LH)
LowCur	Wake Up Power Bank For Low Current Output	ON	ON/OFF
ShwType	Display Voltage / Power	V	V is to display voltage, P is to display instant power
ZeroP_Ad	Temperature Calibration		Automatic adjustment, not modifiable

Note: See page 10−11 for details of parameter definitions;
Config parameter setting will be updated to TS80P after saved.

5 Soldering Iron Tip

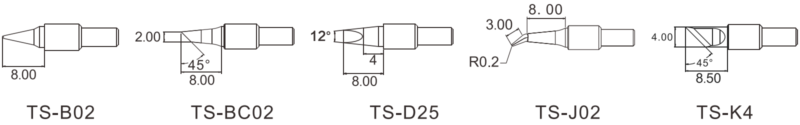
5.1 How to replace soldering tip



1) Cut off power before replacing the soldering tip;
2) Pull out the old soldering tip and then insert the new one;
3) Turn on power. If “Sen-Err” appears on TS80P after power is on, it means the soldering tip is not installed securely and therefore shall be installed once again.

5.2 Choosing Soldering Iron Tips

Note:Choosing the right tips will help you work more efficiently.



5.3 Soldering Tip Maintenance

(1) Before switching off, wipe the tip's soldering side with some solder.

(2) Do not leave the tip in high temperature for long time, which may cause it burn out.

(3) Do not push too hard while soldering, which will damage the tip.

(4) Do not use rough material or files to clean the tip.

(5) If the tip surface is oxidized and makes it hard to apply solder on it, you may use 600~800 grit sandpaper to wipe the tip with Ethanol or Isopropyl alcohol, heat up to 200℃ and apply solder immdeiately to avoid it oxidizing again.

(6) Do not use Flux that contains high chlorine or acid, use only resin based flux.

6 Trouble Shooting Guide

Problem 1: **No Display**	Check 1: If the power supply or cable is broken. Check 2: Connect TS80P to computer, see if the computer has a USB connection or TS80P enters DFU mode.
Problem 2: **The temperature status display random numbers**	Check 1: Means the machine is checking status, which is normal. Check 2: Is the soldering iron installed propely? Check 3: Is the power cable in loose or defective contact?
Problem 3: **Soldering iron restarts automatically**	Check 1: Is it properly plugged into the power source? Check 2: Is the voltage too low? (need to be set up in the config file)
Problem 4: **OLED displays “Low-Vot”**	Check 1: Whether the power parameters meet the use requirements.

Problem 5: **OLED displays “Sen-Err”**	Check 1: Is the soldering iron installed propely? Check 2: If check 1 passes, then replace the soldering tip.
Problem 6: **The tip doesn’t stick to the solder**	Check if: 1. Tip temperature is over 400℃. 2. The soldering side of the tip is not applied with solder properly. 3. Lack of flux during operation. 4. Rub the tip against dry or high sulfur sponge or fabric. 5. Tip touched organic material like plastic, silicone oil or other chemicals. 6. Using impure solder or solder that contains low proportion of tin.
Problem 7: **TS80P can be heated normally when it is powered by a power bank, but shuts down after maintaining a constant temperature**	Check 1: Set the "LowCur" menu option to "ON".

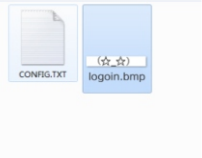
7.1 Standard Service

One year of free warranty will be provided, if the damage was not caused by false manipulation by the user. Please contact your seller for warranty details.

Tips are consumables products, once it's used, no replacement will be provided.

7.2 Changing Bootup Icon

1) Create your own 96*16 pixel image save as BMP in single color bitmap, file name as "logoin.bmp";
2) Connect TS80P with computer, and enter the virtual disk;
3) Copy the bmp file to the root directory of the virtual disk, remove the connection to complete.



7.3 Firmware Update



1. Visit www.minidso.com or www.minidso.com,and download the suitable TS80P firmware to your PC.
2. Hold TS80P’s button “A”, and connect TS80P to your PC with USB Type-C cable, to enter DFU mode. A display of “DFUX.XX” will appear on the screen;
3. Copy the .hex firmware to the root directory of that disk. When the extension of the firmware changes from “.hex” to “.rdy”, disconnect USB and the firmware is upgraded.

8 Legal Statements

8.1 Disposal

Do not dispose this product with domestic waste

- This device complies with the WEEE Directive (this additional product label indicates that this electronic product must not be disposed of in household waste).
- Handling and recycle:Disposal of the product shall be manipulated according to laws and regulations in your area.

8.2 Statement of Fulfilling FCC Standard

This device fulfills part 15 of the FCC regulations Device must fulfill below 2 conditions:

(1) Device must not generate interference;

(2) Device must be able to resist any interferences on it, including interferences that could cause dangerous manipulation.

8.3 Statement of Fulfilling CE Standard

This product with CE logo on it fulfills related Euro Union laws and regulations.